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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Tao Zhang

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BLAKELY SOKOLOFF TAYLOR & ZAFMAN LLP

1279 OAKMEAD PARKWAY

SUNNYVALE, CA 94085-4040

EXAMINER

BAE, JI H

ART UNIT

PAPER NUMBER

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/550,473	<b>Applicant(s)</b> ZHANG ET AL.	
	<b>Examiner</b> JI H. BAE	<b>Art Unit</b> 2115	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 22 September 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-29 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 September 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>11/6/2006, 11/11/2008, 3/31/2009</u> . | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION*****Drawings***

The drawings are objected to because the reference numbers “512”, “514”, and “518” in Fig. 5 are missing descriptive labels. The Examiner notes that paragraphs 36 and 40 of the disclosure teach that the elements referenced by “512”, “514”, and “518” are described as steps that return control back to the firmware or installation toolkit.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Specification***

The disclosure is objected to because of the following informalities: in paragraphs 36 and 37, the reference numbers in the specification do not match with those given in the figures. The Applicant has evidently interchanged the reference numbers for the components

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(installation toolkit, firmware, non-volatile memory) with the steps being carried out. For example, in Fig. 5 the non-volatile memory is given the reference number "504", while in paragraph 36, it is referred to by the numbers "508" and "510". The examiner notes that in Fig. 5, numbers "508" and "510" are used to reference the **steps** of updating the non-volatile memory rather than the actual non-volatile memory itself.

Appropriate correction is required.

### ***Claim Objections***

Claims 24-29 are objected to because of the following informalities: usage of the word "complimentary" versus "complementary". The Examiner submits that the Applicant's usage of the term "complimentary BIOS" is not appropriate for the given context, and recommends that the Applicant amend the claim to recite a "complementary BIOS". The Examiner's objection is based on the understanding that the ordinary meaning of the word "complementary" is more appropriate to describe the invention than the word "complimentary". Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-23 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 1, 13, and 18, the claims recite a step of "enabling" a BIOS to access the stored firmware binary file. The Examiner submits that the word "enabling" is passive and

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does not recite any actual functionality. "Enabling" may interpreted so broadly as to include anything that does not specifically prohibit a BIOS from accessing the stored firmware binary file.

Regarding claims 2-4, 19, and 20, the Applicant's usage of the word "interface" is unclear. The Examiner submits that the Applicant does not provide a specific and consistent description, usage, or definition of the word. For example, in the last sentence of paragraph 32, the Applicant teaches that "an interface is used to describe the service or capability that the relevant object can provide". However, in Fig. 4, the Applicant usage of "interface" in the labeling appears to indicate that an "interface" is an abstraction used to delineate the boundaries between the hardware, software, and firmware. For the purposes of prior art search, the Examiner will assume that anything that accomplishes the functions of the claimed "interface" will be considered as comprising an interface.

Regarding claim 16, the claim recites "the first flash memory device" in line 1. There is insufficient antecedent basis for the limitation in the claim. The Examiner notes that the parent claims recite a "first memory device", but do not specifically recite a "flash memory device".

### ***Claim Rejections - 35 USC § 101***

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 18-23 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Regarding claim 18, the claim recites a "machine-readable medium". The Applicant's specification describes a machine-readable medium as comprising "propagated signals such as electrical, optical, acoustical or other form of propagated signals (e.g., carrier waves, infrared

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signals, digital signals, etc.)". The Examiner submits that signals as described are non-statutory because they cannot be properly categorized as a process, machine, article of manufacture, or composition of matter. The Examiner recommends that the Applicant amend the claim to specifically recite ***non-transitory*** machine readable media.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21 (2) of such treaty in the English language.

Claims 1-6, 9, 10, 13, 15-22, 24, and 25 are rejected under 35 U.S.C. 102(e) as being anticipated by Rothman et al., U.S. Patent Application Publication No. 2004/0123093.

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C.

102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

The Examiner notes that the reference is also available as prior art under 35 U.S.C. 102(a).

Regarding claim 1, Rothman teaches:

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storing a firmware binary file in an extension area of a non-volatile storage device of a computer system **[Fig. 3: BIOS extensions and option ROMs stored in memory 204. Fig. 1 and 2: memory 204 is part of micro-BIOS 130 and ROM 128. Paragraphs 16 and 25: memory 204 comprises non-volatile memory]**; and

enabling a Basic Input/Output System (BIOS) of the computer system to access the stored firmware binary file **[Paragraph 23: micro-BIOS locates BIOS extensions and option ROMs to complete boot configuration steps]**.

Regarding claim 2-4, Rothman teaches invoking a firmware or hardware interface via an installation toolkit **[Paragraph 35: detection services 216 locate and copy BIOS extensions and option ROMs based on location information determined from BIOS extensions and option ROMs stored in memory 204]**.

Regarding claim 5, Rothman teaches that the firmware binary file is a firmware application binary **[Paragraph 35: BIOS extensions are executable]**.

Regarding claim 6, Rothman teaches that the firmware binary file is an OS application binary **[Paragraph 23: BIOS extensions extend micro-BIOS]**.

Regarding claim 9, Rothman teaches that the BIOS is stored in a main area of the non-volatile storage **[Fig. 1: ROM 128 and micro-BIOS 130, vs. memory 204 in Fig. 2]**.

Regarding claim 10, Rothman teaches performing preparatory tasks **[Fig. 5: step 502, initializing hardware]**.

Regarding claim 13, Rothman teaches the method of claim 1, and also the computer system to executed the claimed method.

Regarding claim 15, Rothman teaches a main area to store the BIOS and an extension area to store the firmware application binary file **[Fig. 2 and 3: micro-BIOS and memory 204, which stores BIOS extensions]**.

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Regarding claim 16, Rothman teaches that the first memory device comprises a shared area to provide communication between the main area and the extension area **[Paragraph 34: hardware information 302 of memory 204, used by micro-BIOS to match hardware with associated option ROMs]**.

Regarding claim 17, Rothman teaches that the first and second memory devices are the same device **[Fig. 1 and 2, paragraph 22: micro-BIOS includes boot engine which executes the booting functions]**.

Regarding claims 18-22, Rothman teaches the method of claims 1-6, and also the article of manufacture with instructions stored thereon to execute the claimed method.

Regarding claim 24, Rothman teaches a firmware storage apparatus comprising a main area to store BIOS program code; and

an extension area to store complementary BIOS program code **[Fig. 2 and 3: micro-BIOS includes memory 204 which includes BIOS extensions]**.

Regarding claim 25, Rothman teaches a shared area to store data accessible by both the main area and the extension area **[Paragraph 34: hardware information 302 of memory 204, used by micro-BIOS to match hardware with associated option ROMs]**.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 7, 11, 12, 14, 23, and 26-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rothman in view of Zimmer, U.S. Patent Application Publication No.



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2003/0097581. The Examiner notes that Zimmer is available as prior art under 35 U.S.C.

102(b).

Regarding claim 7, Rothman teaches the method of claim 1, but does not teach that the computer system operates in accordance with the EFI framework specification.

Zimmer teaches a computer system that operates in accordance with EFI **[Paragraphs 3, 24, 25]**.

It would have been obvious to one of ordinary skill in the art to combine the teachings of Rothman and Zimmer by modifying the system of Rothman to operate in accordance with EFI, as taught by Zimmer. Both Rothman and Zimmer are directed towards pre-boot initialization of computer systems. The teachings of Zimmer regarding EFI would have improved the system of Rothman by conforming Rothman to operate according to an industry standard specification **[Paragraph 4]**.

Regarding claims 11 and 12, Zimmer teaches a preparatory task of checking a firmware binary file for data integrity by checking a digital signature **[Paragraph 57]**. It would have been obvious to one of ordinary skill in the art to further modify Rothman to check for data integrity of an option ROM by checking a digital signature, as taught by Zimmer. Both Rothman and Zimmer teach the use of option ROMs. The teachings of Zimmer would have improved the system of Rothman by providing a way to verify data integrity of the option ROMs. Absent Zimmer's teaching, Rothman does not appear to provide way to ensure data integrity.

Regarding claims 14 and 23, Rothman and Zimmer teach the method of claim 7, and also the computer system and article of manufacture with instructions to implement the claimed method.

Regarding claims 26-29, it would have been obvious as a matter of design choice to provide complementary BIOS program code to perform any number of functions that would

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have enhanced the functionality of the micro-BIOS, including data provisioning code, anti-theft code, etc.

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rothman and Zimmer as applied to claim 7 above, and further in view of Zimmer et al., U.S. Patent Application Publication No. 2003/0188173 (Zimmer '173). The Examiner notes that Zimmer '173 is available as prior art under 35 U.S.C. 102(b).

Regarding claim 8, Rothman and Zimmer teach the method of claim 7, but do not teach the use of a DXE dispatcher to trigger the BIOS to access the stored firmware binary file.

Zimmer '173 teaches a DXE dispatcher to perform the claimed function **[Paragraphs 20, 21, 22]**.

It would have been obvious to one of ordinary skill in the art to combine Zimmer '173 with Rothman and Zimmer by using a DXE dispatcher. Zimmer and Zimmer '173 are both directed towards the EFI specification. It would have therefore been obvious to implement the DXE dispatcher in the combination of Rothman and Zimmer as part of implementing the EFI specification.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

Sekine, U.S. Patent Application Publication No. 2004/0015941,

Turnbull, U.S. Patent No. 7,146,412,

Chawla et al., U.S. Patent No. 6,442,067,

Biondi, U.S. Patent No. 6,622,246,

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Nunn, U.S. Patent No. 6,438,688,  
Stewart, U.S. Patent No. 6,272,629,  
Cheston et al., U.S. Patent No. 6,725,178,  
Thurston et al., U.S. Patent Application Publication No. 2003/0217358,  
Leung et al., U.S. Patent No. 6,282,647,  
Itoh et al., U.S. Patent No. 6,795,912,  
Christeson et al., U.S. Patent No. 6,122,733,  
Gharda et al., U.S. Patent No. 6,564,318,  
Bulusu et al., U.S. Patent Application Publication No. 2004/0236936,  
Choi et al., U.S. Patent Application Publication No. 2004/0017708,  
Guha et al., U.S. Patent No. 6,601,212,  
Wyatt, U.S. Patent Application Publication No. 2003/0217255,  
Mayfield et al., U.S. Patent Application Publication No. 2006/0123223,  
Zimmer, U.S. Patent Application Publication No. 2002/0169979.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JI H. BAE whose telephone number is (571)272-7181. The examiner can normally be reached on Monday-Friday, 9 am to 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Lee can be reached on 571-272-3667. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/JI H. BAE/  
Primary Examiner, Art Unit 2115  
U.S. Patent and Trademark Office  
Phone: 571-272-7181  
Fax: 571-273-7181  
[ji.bae@uspto.gov](mailto:ji.bae@uspto.gov)